

REMARKS

Status of case

Claims 1-22 are currently pending in this case.

Rejections under 35 U.S.C. §§102, 103

Claims 1-9, 14-17, 19 and 20 were rejected under 35 U.S.C. §102(b) as being anticipated by Kauppi (U.S. Patent No. 5,832,381). Claims 11-13 were rejected under 35 U.S.C. §102(b) as being anticipated by Keshavachar (U.S. Patent No. 6,101,388). Claims 10 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kauppi in view of Alperovich (WO 00/03557A).

The Kauppi reference generally discloses location updates in a cellular radio network. As shown in Kauppi, the cellular radio network uses several levels of logical location areas, which are hierarchical with respect to location areas. The hierarchy of location areas, therefore, are not freely configurable. Moreover, the Kauppi reference provides no teaching, or even suggestion, of selecting a suitable area identification based on the section pattern corresponding to the recorded current time.

Keshavachar teaches receiving a location area change notification from a mobile and customizing a location area index table based on the notification. The custom location area index table is transferred to the mobile device if the mobile device supports the custom location area index table. The location registration method in Keshavachar stores a default LA1 (location area identification) table or a custom LA1 table in a communication terminal. The LA1 table shows correspondence between location area ID of a current location area and cell IDs contained in the location area. The default LA1 table is broadcast via the beacon frequency of a specific cell together with identification information of the cell and LA1 of the location area in which the current cell is located. The custom LA1 table needs to be dynamically updated by a mobile switching center to reflect the movement profile of a mobile communication terminal and an updated custom LA1 table is downloaded to the mobile.

Alperovich et al. teaches a telecommunications system for optimizing the use of paging channels within a network by dividing location areas into sublocation areas and providing an efficient and flexible method of paging mobile subscribers. Alperovich et al. uses a technique based on a different area identification information for location registration based on a category of a user or a communication terminal, e.g., a heavy user or a light user. Alperovich et al. does

not teach applying a different category in selecting an area identification information to be used for location registration, which depends on the time when the location registration is performed.

In contrast to the cited art, one aspect of the present application is directed to location registration control, in which different types of section patterns are used for location registration of the communication terminal for different time zones. For example, details of time zone management may be determined by a user and the service operator in the course of the contract procedure. In particular, at the time of contracting, a user may provide the service operator with information such as time zone in which he or she moves frequently, a time zone in which he or she does not move very much, a time zone in which he or she uses transportation (such as a train or a car), and a time zone in which he or she frequently uses cellular phones. The size of the location area used for location registration may change in accordance with a time zone, which may be specified by a user, by using a plurality of section patterns designated corresponding to different time zones.

A current time is recorded at a communication terminal when a plurality of area identification information is received and a selection of suitable area identification from among the received area identification information is made based on the section pattern corresponding to the recorded current time. See e.g., claim 1: “recording, at said communication terminal, a current time at which said area identification information is received” and “said selecting step includes obtaining at said communication terminal section information designating a section pattern corresponding to said recorded current time”; claim 17: “time keeping means for recording a current time at which area identification information on said plurality of types of location areas is received by said receiving means” and “wherein said selecting means includes selecting, on the basis of area identification information on said plurality of types of location areas received by said receiving means, a location area identification corresponding to section information designating a section pattern after obtaining from said storage means information designating a section pattern corresponding to the current time recorded by said time keeping means”; claim 21: “recording, at the communication terminal, a time at which said area identification information is received” and “selecting an area identification from the received area identification information based on the plurality of section patterns corresponding to the recorded time”.

The location registration control may be performed on the basis of stored data in a communication terminal where the stored data contains a plurality of location area identification

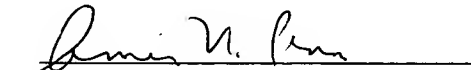
information each being associated with switch or cell IDS included in a location area for a relocation of a particular section pattern. See claims 11, 14, 15 and 16 ("said stored data includes said predetermined section pattern for said selected location area identification comprising switch IDs related to radio cells so that location registration is performed based on the switch ID as cell identification information"). All information related to the location area identification and their corresponding switch IDS or cell identification for a predetermined section pattern is already stored in the communication terminal and no updating is necessary. Thus, location registration can be performed solely on the basis of the switch or cell IDS. As a result, specific cells do not have to contain information such as location area identification or a list of cells which belong to the location area for transmitting them to communication terminals.

None of the cited references, alone or in combination, teach or suggest applying a different category in selecting an area identification information to be used for location registration depending on a time when the location registration is performed and performing such location registration solely on the basis of the switch or cell IDS. Accordingly, Applicant submits that claims 1 to 22 of the present application are patentable over the cited art.

Summary

Applicants submit that based on the foregoing remarks, the rejections have been traversed, and that the claims are in condition for allowance. Should there be any remaining formalities, the Examiner is invited to contact the undersigned attorneys for the Applicants via telephone if such communication would expedite this application.

Respectfully submitted,


Amir N. Penn
Registration No. 40,767
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200